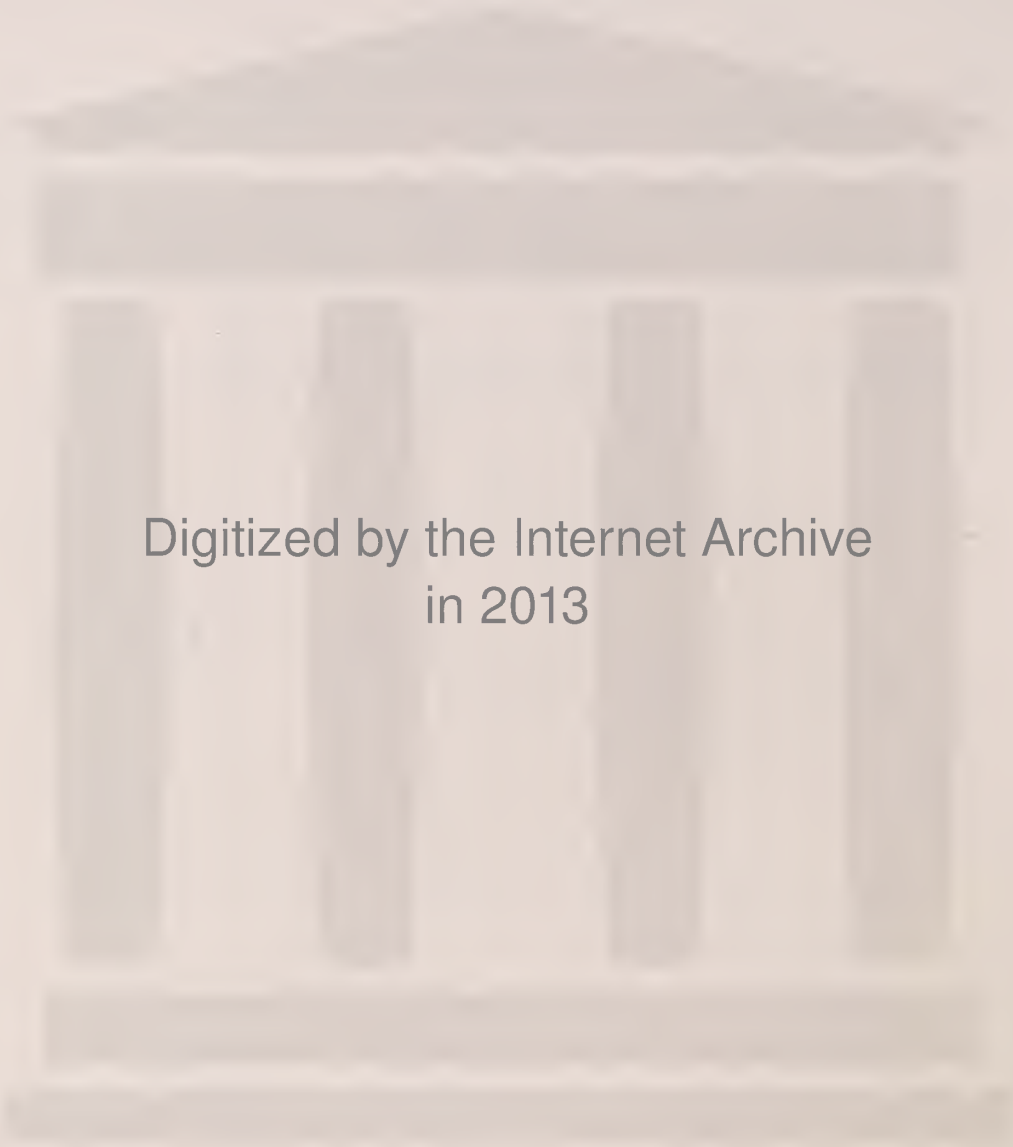
Center for Studies in Policy and
the Public Interest

Cable Television in Massachusetts

University of
Massachusetts



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CABLE TELEVISION IN MASSACHUSETTS

Padraig O'Malley
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Preface

After a long slow period of development in which cable television companies existed principally to provide better viewing of broadcast programs in localities where ordinary reception was poor, Cable TV began to grow dramatically in the late 1970's. The stimulus for this sudden growth came from a new realization of the profit potential inherent in the developing technology of cable systems.

The financial attractiveness of nationally-distributed pay-TV shows caused Cable TV to grow from 3000 systems serving 5400 communities in the United States in 1974 to 4300 systems serving 10,430 communities in March 1981. The revenue possibilities for cable-delivered entertainment and consumer services directed to paying subscribers brought new capital into what had been a relatively static field of business, and by the end of the 1970's financial analysts described Cable TV as a significant growth industry. They were right in doing so.

The rapid growth of Cable TV continues in the present decade, promising to open up fully what the Sloan Commission on Cable Communications nearly ten years ago called "the television of abundance".

Not only are more and more communities now franchising cable systems, but the systems themselves feature a great technological increase in communications capacity, offering far more channels, the capability for two-way transmission, and other features. Because the profit potential in a franchise is so considerable, companies compete vigorously for favorable consideration by communities, and Cable TV has become big business, with the rise of great multiple system operators (MSO's) like Warner Amex and Teleprompter. Communities ready to entertain applications for cable franchises find themselves ardently wooed by competing companies, some of them very large, and local officials are besieged by cable suitors who seem willing to promise anything for a franchise award. The result is a situation in which citizens and leaders of local communities, not necessarily familiar with the technology and business of telecommunications, find themselves faced with making important decisions about what amounts to a complex new public utility without the background they require. The importance of adequate background about cable facts and potentialities is very great, and the need for it by decision-makers today is a fundamental civic need.

It is because of this need for independent information about the realities of Cable TV — free of the pressure of the hard-sell — that the present report has been prepared. This study is an example of *issues research,* intended as a service to local citizens and community officials as they assess policy options in franchising a cable system. We hope it will serve in that way.

The University of Massachusetts for some years has had a continuing interest in telecommunications policy and performance, as has this Center. President David Knapp served on the Special Advisory Commission on Cable Television for the City of Boston in 1979-80 and encouraged us to undertake the present study. Padraig O'Malley, author of this report, was assisted in developing it by a number of expert consultants and critics, including Mr. Jeffrey Forbes, former Massachusetts Cable Commissioner, Dr. Gunther Weil, Director of the UMass/Boston Center for Media Development, Mr. Wilson Pile of this Center, and Dr. Jennings Bryant, Associate Professor of Communications Studies, UMass/Amherst.

My own interest in public policy and telecommunications goes back to the first Carnegie Commission, in which, as a group of interested citizens, some of us developed the present concept of public broadcasting. Our Carnegie experience convinced me that citizens can reach policy decisions about telecommunications most effectively when they have the advantage of relevant, objective information. In this spirit, I commend the present report to those who are concerned with making Cable TV a proper part of our community and individual lives.

Franklin Patterson
Boyden Professor of the University
Director,
The Center for Studies in Policy and the Public Interest

Introduction

The story of modern communications begins in the 1870's with a Scotsman, James Clerk-Maxwell, mathematician and physicist. In 1873 he published his *Treatise of Electricity and Magnetism,* in which he laid out the mathematical proof of a revolutionary new theory: namely, that electromagnetic energy travelled through space in much the same way as light waves did, and consequently, that light and electricity were in their ultimate nature, almost identical. What he had discovered, in fact, was that the transmission of signals that were later to be called "radio waves" was theoretically possible. It should be noted in passing that Clerk-Maxwell, good scientist and poor businessman that he was, saw no practical application whatsoever for his momentous discovery.

And neither did another scientist, the German Heinrich Hertz, who conducted a series of experiments in the 1880's that proved first, that the electromagnetic "waves" described by Clerk-Maxwell did indeed exist; second, what their sizes and speeds (frequencies) were; and third, how they behaved under different circumstances. Unbeknownst to himself, Hertz had invented radio broadcasting, and had during his experiments actually transmitted signals from one place to another.

Today the electromagnetic spectrum is crowded with signal traffic used for just about every conceivable communications purpose, ranging from standard navigational time signals at the Very Low Frequency band to satellite communications at the Superhigh Frequency band. Between these two frequency extremes there are five other frequency bands — Low Frequency, Medium Frequency, High Frequency, Very High Frequency, and Ultra High Frequency — each of which can accommodate only a limited number of uses, and each of which is better suited for some uses than for others. Because the spectrum was, like oil, once believed to be in almost unlimited supply, its frequencies were allocated in a rather haphazard manner by the International Telecommunications Union — an agency of the United Nations, largely on a first come first served basis. Today about 10% of the countries have come to occupy almost 90% of the available frequencies, leaving the undeveloped nations with little of a limited resource.

With the realization that the spectrum is in fact limited has come the task of choosing more judiciously among competing demands for space. Cable television has facilitated that task because cable alleviates two opposing strains on the electromagnetic spectrum — the fact that each frequency is better suited for some purposes than for others, and the fact that the demand for some frequencies exceeds the supply. However, even though cable grew out of the need to deal with the demands of limitation, the impetus for rapid growth has come from the opposite direction. It is the possibility of abundance that cable and the newer technologies offer that has fueled the drive to fill what seems like an insatiable demand for newer forms of communication and information.

These two factors — the demands of limitation and the possibilities of abundance — provide the framework for this Primer. Within that framework, we will look at:

- the differences between conventional television and cable television
- why cable television has recently grown so rapidly
- what inter-active television is
- how a cable franchise is awarded
- what programming services cable television offers
- what kinds of local programming cable television can provide, and finally,
- what privacy issues are raised by the uses of cable technology and interactive television.

The Differences Between Conventional Television and Cable Television

At about the same time that James Clerk-Maxwell was making his discovery about radio signals, a very proper Bostonian named George Carey was figuring out a way to break up the elements of still pictures with electrical signals and subsequently to reconstitute them. In 1875 he succeeded, and within ten years Paul Nipkow patented a device in Germany that remained at the heart of all television experimentation from 1874 until RCA literally and figuratively came into the picture in 1930. A method of so-called "image scanning" was invented by Nipkow that depended upon a rotating disc. This device broke an image up into electrical components at one end of an apparatus, and another disc reconstituted them on the receiving end.

When RCA decided to get into the business of television in 1930, it hired Vladimir K. Zworykin who had patented a tube he called the "iconoscope" in 1923 that, in theory, did away with mechanical image procedures and substituted an ingenious electronic method for accomplishing this purpose in both camera and receiving set. It took the RCA engineers, working under Zworykin, nine years to put it all together, and on April 30, 1939, RCA's experimental television station, WQXBS, broadcast live pictures of the opening of the New York World's Fair at Flushing Meadows Park in Queens.

Today, there are two ways of transmitting an electronic signal from the TV camera that creates it to the television set which then decodes the signal and turns it into the images and sounds that appear on your television screen.

- The signals of a program can be carried by wire from the TV camera to a transmitting antenna which then broadcasts the signal over the air on an electromagnetic wave. This is what we know as conventional television. It comes to you, quite literally, out of the air.
- The signals of a program can be carried along a coaxial cable from the point of origin to your television set. There is a physical cable link between every TV set in the system and the source of the signals which is called the head-end. The head-end, so called because it is at the head or starting point of the system, is a building which houses a variety of engineering equipment. It consists of receiving antennas, receivers, converters, amplifiers, and in more sophisticated systems, microwave equipment, and even earth satellite dishes. The head-end can either retransmit the signals of a program which it has plucked out of the air using all this technical hardware, or the head-end itself can be used as a production studio, in which case it originates the programming.

Conventional Television

Conventional television has two major shortcomings:

- Only certain frequencies on the electromagnetic spectrum are suitable for carrying television signals. This restricts the number of signals that can be carried, and hence the number of channels you can receive. The best frequency for television is the Very High Frequency (VHF), but this frequency can only accommodate twelve channels. The next best frequency is the Ultra High Frequency

(UHF), which can carry up to 70 channels. However, it has one serious drawback: the quality of the reception is usually inferior to that of VHF.

- A second drawback to transmitting television signals over the air is due to the nature of electromagnetic waves. There is a great deal of interference between TV signals that travel on or around the same wave length, and there is also interference between television signals and other users of the electromagnetic spectrum. Moreover, interference from other channels and man-made noise is even more marked on the UHF band.

Enter the Federal Communications Commission (FCC). The FCC was established by the Communications Act of 1934. In passing this Act, Congress affirmed that radio waves constituted a limited natural national resource. Access to the nation's airwaves (the property of the people) was possible only with the permission of the federal government acting through its agent, the FCC. The Commission has seven members, appointed by the President and representing both political parties, who serve for seven years each.

The FCC has three main functions. One is legislative: to make rules regarding license awards, renewals, engineering matters, etc. Another is disciplinary or punitive: to enforce these rules and punish (usually by threatening to withhold licenses) those who do not obey them. The third is judicial: to select between competing interests of any kind so as to regulate broadcasting services for the public good. Thus, when television arrived, the FCC had two tasks. First, it had to limit the number of transmitting stations that could exist in the U.S., and second, it had to allocate these stations geographically in a way that would best serve the public interest.

As a result of that allocation, four VHF stations (three network and one non-commercial educational), and nine UHF stations (two network, five independent, and two non-commercial educational), are currently operating in Massachusetts. Their distribution is shown in Table I.

In summary, conventional television is limited by:

- the scarcity of the right kind of space within the electromagnetic spectrum
- the interference that occurs between the signals.

In the future the scarcity of space is likely to become even more acute since the frequencies that are best suited to transmitting television signals are also best suited for a number of other competing uses such as aircraft, space vehicles, and maritime vessels connected to their ground control installations; taxicabs, police cars and ambulances connected to their radio dispatchers; AM and FM radio; the U.S. government and its satellite surveillance equipment.

Cable Television

The story of cable television starts in the small city of Mahoney, Pennsylvania back in 1948 when John Watson decided to do something about the chronically bad TV reception he was getting. His solution was simplicity itself. He erected a 70-foot utility pole on the top of New Boston Mt. and strung wire to his store in downtown Mahoney city. The reception was terrific. Thus, cable television — or Community Antenna Television (CATV) as it was known was developed in the late 1940's in communities which were unable to receive broadcast television signals due to mountainous terrain or distance from local television stations. Local entrepreneurs or community groups erected antennas on top of the mountains. These antennas were able to receive the signals of distant transmitting stations. The CATV operators ran coaxial cables from the master antenna along a line of poles and into the homes of subscribers who paid a one-time installation fee of about $100 and a monthly service charge of about $3.00.

Since then cable has grown into an industry with over $1.5 billion in annual revenues in 1979. There are over 4300 cable operating systems in the U.S. serving over 15 million subscribers (20% of total TV households) in some 10,430 communities. During the 1980's, cable television is expected to reach 45 million subscribers and offer, on the average, 35 channels. The 'typical' cable system charges a subscriber a one-time installation fee of $15 and a monthly fee in the range of $7. Nearly all of the new systems being constructed have a capacity of at least twenty channels. However, 70% of existing cable systems still have a capacity of twelve channels or less because nearly all of the earlier systems were built in areas of low population density and were designed to take care of a specific problem — poor reception.

Cable television is superior to conventional television:

- Cable TV can carry far more channels than conventional television. It is capable of using the entire frequency spectrum — not just the VHF and UHF frequencies.
- Cable television has no reception problems. It provides clearer, sharper pictures than conventional television.
- Cable television does not demand space on the electromagnetic spectrum, thus freeing space for other uses.

Why Has Cable Television Recently Grown So Rapidly?

During the 1950's and the 1960's cable television languished. It was thought of as a remedy for poor TV reception in rural areas, and as little else. In the 1970's, however, a series of technological breakthroughs dramatically changed the landscape of telecommunications and ushered in the era of the cable.

The key factors behind the phenomenal growth of cable television during the last decade are:

- advances in technology that have increased the transmitting power of a cable.
- advances in technology that have increased the channel capacity of a cable.
- advances in technology that have increased the ways in which a cable system can receive television signals.
- deregulation of the industry by the FCC.
- the growth of Pay-Cable.

Advances in technology that have increased the transmitting power of a cable.

The physical arrangements of a cable system are like a tree. The main trunk cable runs from the head-end along the major routes to be covered. It then branches out into "feeder cables" which are installed within approximately 75-100 feet of each residence. Branching off from these feeder lines are smaller cables called "drop lines" which are directly connected to each television set.

A television signal loses strength as it passes along the cable. Accordingly amplifiers have to be inserted along the line to compensate for the loss. Initially amplifiers were expensive and had a limited capacity to boost a television signal. Today, the situation is much different. Technical innovations have resulted in amplifiers that have a far greater capacity and are far less costly. As a result it is technically and economically feasible for a cable to reach a far greater number of homes. Thus, successive explosions in the size of the potential market have made the rapid growth of cable television possible.

Advances in technology that have increased the channel capacity of a cable.

The earliest cable systems were able to carry 3 channels into a subscriber's home. Later systems raised the number to 12, then to 25, and today a single coaxial cable can carry up to 40 channels. Moreover, it is now possible to lay a twin cable system that can carry 104 channels, and with the development of "fiber optics", a compact cable system made from glass rather than metal, the number of channels could rise to the hundreds, and even the thousands.

Advances in technology that have increased the ways in which a cable system can receive television signals.

Today, there are four ways a cable system can receive a television signal:

- **From an antenna at the head-end which picks signals out of the air from conventional television stations operating in the area.**

The more elaborate the antenna, the larger the area, and the more stations that become available. Thus the basic cable viewer can pick up all the network stations in the area along with a clutch of independent stations whose signals are too weak to be picked up by his home antenna. The basic cable viewer may also be able to pick-up out of the area network stations that may show on a Wednesday, for example, something he missed on a local outlet on a Tuesday.

- **By having long-distance TV signals relayed to the head-end antenna by means of a micro-wave.**

A micro-wave is a method of transmitting TV signals over the air at high frequency. A micro-wave relay allows a cable system to pick up network and independent stations from areas that are geographically distant from the home area. For example, a micro-wave could pick up WPIX-TV out of New York City and bring it into the Boston area.

- **By having long distance TV signals relayed to the head-end antenna by means of a satellite.**

Satellite communications revolutionized the cable industry because satellite transmission made it easy for programmers to send signals from a single studio into cable systems all over the country.

It works as follows:

First, the programmer leases space on one of the eleven communications satellites hovering about the earth. The programmer then sends TV signals from the studio out to the satellite. The signals are bounced off the satellite and are relayed back to earth where they are picked up by cable systems that have installed the necessary receiving equipment — a satellite earth station, or as it is more commonly called a "dish". Satellite transmission has resulted in three types of programming — "superstation" programming, cable "network" programming and pay-cable programming — which are discussed on pages 22-24. By the end of 1980 the cable television industry had about 2000 receiving dishes capable of obtaining a satellite signal.

- **By setting up TV production facilities at the head-end.**

About two-thirds of all cable systems originate programming from their own studios, averaging about 23 hours per week.

Deregulation of the industry by the FCC.

In the 1950's and 1960's, FCC rulings were primarily designed to protect the broadcasting industry. As a result, there were severe restrictions on the number of signals that a cable operator could transmit, and this in turn precluded operators from taking advantage of some of the technological innovations previously described. The FCC began to relax some of these regulations in 1972. Recently, however, the FCC has gone a lot further reversing itself on two key prior rulings.

The first had prohibited a cable system from importing more than two distant television signals, and the second had prohibited cable systems from picking up programs of independent stations which had exclusive arrangements with the networks for rerun materials, or which had exclusive arrangements to broadcast sports events.

In May 1979 the agency's commissioners voted 6 to 1 in favor of a proposal to allow cable operators to pick up signals from as many distant broadcast TV stations as they wished. However, the broadcast industry appealed the ruling and sought a stay of implementation. The courts granted the stay but have not yet decided the issue. For the time being, therefore, the rulings that restrict the importation of distant signals and permit programs exclusivity arrangements remain in effect.

A further ruling by the FCC has made it a lot easier and a lot less costly for a cable sytem to install that equipment. Formerly, the FCC had required satellite earth stations to be 10 meters in diameter with the result that the "dishes" were quite expensive — in the range of $90,000. Now the Commission permits smaller dishes and this has brought the cost down to the $10,000-$25,000 range. Many cable operators can now justify installing them in order to receive an ever increasing variety of programming distributed via satellite.

And finally, until recently the access of the suppliers of pay cable services to feature films was restricted by FCC rules. These rules specified that most films could be cablecast on premium channels only if they had been in general release for less than three years or for more than ten years. These rules were overturned by the Courts in 1977, and since then the market for premium cable programming has become more competitive, and more lucrative.

The Growth of Pay-Cable

In a sense the term "pay-cable" is a misnomer since there is no such thing as "free-cable" — the subscriber pays for all cable television services. What "pay-cable" refers to, therefore, is the programming that comes to a subscriber over a special channel. For an additional monthly fee (ranging from $3 to $10 and averaging $7.4) the subscriber gets a decoder that unscrambles pictures transmitted over the special channel by a for-cable-only programming company that sells its services to the local cable operator.

When satellite transmissions became a reality, it transformed the market for, and the technology of pay-cable. Today, in dollar terms, pay-cable services comprise the largest segment of the cable programming market. Currently 4.3 million households subscribe to pay-cable services. These services consist almost entirely of feature films, entertainment specials, and sporting events.

The pay-cable program suppliers deliver their program packages to the cable operator either over phone lines or cassette or by satellite. The signal is then electronically 'scrambled' before it is relayed into the subscriber's home. Only subscribers who have paid the additional fee have the 'descrambler' devices which allow them to view the program. Although the cable operator collects the monthly premium fee from the subscriber, the revenues are usually divided between the cable operator and the program supplier.

The technological advances described above have transformed the cable television industry, creating exciting new possibilities in the field of telecommunications. For example, it is now possible to "interconnect", via satellite or micro-wave, any number of cable systems that have installed the necessary receiving equipment. This creates opportunities for state-wide cable networks, regional cable networks or even national networks whose potential breadth of reach may rival or surpass the power of the national conventional TV networks.

And this is only the beginning. Still more far-reaching innovations are at hand, particularly in the emerging field of inter-active television.

In short, the technological advances of the last decade have made it possible for material of wide appeal to reach ever-larger audiences while the narrower audiences for more specialized material can also be 'pin-pointed' and served with greater efficiency.

What is Interactive Cable Television?

Interactive television allows viewers to 'talk back' to their television sets. Based on computer technology, interactive television allows viewers to respond — simply by using a calculator-like console — to questions or comments flashed on the screen.

Warner Amex's two-way cable system in Columbus, Ohio, is the most highly developed interactive system currently in operation. The Qube system, as it is known, enables subscribers to do the following:

- By pressing buttons on their consoles, they can express opinions on issues, answer multiple choice questions, judge television performances, guide panel discussions.
- They can participate in educational programs and take college credit courses in their own homes. The instructor can take attendance by having participants press a button on their consoles, and multiple questions can be given to test progress.
- They can register their opinions on important community issues through interactive programming that allows public officials to solicit their responses to policy alternatives.
- They can purchase special programs such as a movie, a sports event, or an opera on a one-at-a-time basis.

Other services provided by QUBE are sophisticated burglar, fire, and health emergency alarm systems, and the ability to purchase merchandise and services directly via cable — the living room television set becomes an electronic supermarket.

In fact, the Columbus system has become the testing ground for new advertising formats which combine product offerings with informative programs. The *"Qubit"* offers advertisers varying commercial lengths up to two minutes, and the *"Informercial"* ranges from five to fifteen minutes in length. Advertisers have taken advantage of these new advertising formats combining them with the system's interactive capabilities. For example, American Express Travel Service polled viewers on which tour package they wished to learn about, and then provided an *"Informercial"* of the travel area which received the largest consumer response.

The "Video Catalogue Channel" takes the process one step further. Products from consumer catalogues are displayed at five minute intervals throughout the day, and consumers are able to order items directly using their interactive home terminals.

How is the Cable Franchise For Your Community Awarded?

Above all cable television is the television of abundance. Beyond the standard and ever-more profuse diets of entertainment fare that it offers it has or can have an enormous unused capacity. The use to which that capacity is put can affect many aspects of the social, economic and political fabric in your community. On the one hand, cable can enrich the quality of life and the level of community inter-action if its potential is fully understood and developed imaginatively for the good of the community. On the other hand, if its potential is not fully understood, your community can fritter away a valuable resource in return for a few more sports networks, the odd movie and some more television reruns.

Accordingly, the public officials charged by Massachusetts law with the authority to award a cable franchise have an onerous responsibility. They must not only make the right decision, that is a decision that is in the best interest of the community, they must be seen to make the right decision.

These public officials are:

- The mayor or city manager in a city.
- The board of selectmen in a town.

A carefully considered plan of action that involves the following four steps is essential:

First, there should be a determination of the options open to the community, and a careful review of what all segments of the community need from a cable system.

Second, there should be a process for drafting, revising, and approving a city or town ordinance that lays out the ground-rules and requirements for the cable operation. This step should involve public hearings and provide a forum for special interest groups, community organizations, etc.

Third, there should be a franchising process for choosing the best applicants to operate the system.

Fourth, there should be an ongoing process of supervision and enforcement to guarantee that the requirements of the ordinance and the franchise are being fulfilled.

It is the municipality alone that develops and passes the ordinance which authorizes the installation of a cable system with specific rules governing construction, areas of service, fees, operations and regulations. This means that the quality of the service your community receives is entirely dependent upon what your community demands from a cable applicant, and how diligent your community is in making the cable system live up to its contractual obligations.

The key questions are:

- who should have access to the cable system's unused capacity
- how should it be used to serve the interests of the community
- who should decide how it should or should not be used
- who should manage its use
- and who should provide the financial resources required to make its use possible

Thus, there are certain decisions that must be made at the beginning.

Ownership

First, there is the question of what form ownership should take. Presently there are four basic patterns:

- private
- municipal
- co-operative/non-profit
- joint venture between private and non-private groups

Over 3.64 million or 26% of all cable households are served by the five largest cable television companies, and the top 25 serve 54% of subscribers. The principal advantage of privately owned (for profit) systems is their ability to raise the investment capital required and privately held companies are by far the most common form of ownership.

According to the most recent state cable commission records, Massachusetts now has 91 communities that receive cable television (Table 2). About 273,000 homes get the service from 23 cable companies. A franchise license has been awarded in 35 other communities where construction of the system is now either under way or pending (Table 3).

Cable Television Systems Operating in Massachusetts

Table II

Community and Licensing Authority if Other than Selectmen	Operating Company	Parent Company
Adams	Berkshire Telecable N. Adams, Mass.	Cox Cable Communications, Inc., Georgia
Agawam	Spectrum Cable Systems, Inc. Westfield, Mass.	Commonwealth Cablevision Corp., Michigan
Amesbury	New England Cablevision of Massachusetts, Inc. Amesbury, Mass.	New England Cablevision Maine
Amherst	Pioneer Valley Cablevision, Inc., Amherst, Mass.	Times Mirror Cable Television California
Athol	Warner Cable Corp. Athol, Mass.	Warner Cable Corp. New York
Auburn	Teleprompter of Worcester, Inc., Worcester, Mass.	Teleprompter Corp. New York
Barnstable	Cape Cod Cablevision Corp. South Yarmouth, Mass.	
Bernardston	Deerfield Cable Systems Greenfield, Mass.	
Billerica	Greater Boston Cable Corp. Woburn, Mass.	Colony Communications Rhode Island
Brewster	Cape Cable TV Orleans, Mass.	
Buckland	Pioneer Valley Cablevision, Inc., Greenfield, Mass.	Times Mirror Cable Television California
Burlington	Greater Boston Cable Corp. Woburn, Mass.	Colony Communications Rhode Island
Charlemont	Charlemont TV Company Charlemont, Mass.	
Chatham	Cape Cod Cablevision Corp. South Yarmouth, Mass.	
Chelsea Mayor	Warner Cable Corp. Medford, Mass.	Warner Cable Corp. New York
Cheshire	Berkshire Telecable N. Adams, Mass.	Cox Cable Communications, Inc., Georgia

Community	Operating Company	Parent Company
Chicopee Mayor	Greater Chicopee Cablevision, Inc. Chicopee, Mass.	Greater Media, Inc. New Jersey
Clarksburg	Berkshire Telecable N. Adams, Mass.	Cox Cable Communications, Inc., Georgia
Dalton	Warner Cable Corp. Pittsfield, Mass.	Warner Cable Corp. New York
Dartmouth	Whaling City Cable TV, Inc. New Bedford, Mass.	Colony Communications Rhode Island
Deerfield	Deerfield Cable Systems, Inc. Greenfield, Mass.	
Dennis	Cape Cod Cablevision Corp. South Yarmouth, Mass.	
Dudley	Greater W-D Cablevision Co., Inc. Webster, Mass.	Greater Media, Inc. New Jersey
Easthampton	Greater Easthampton Cable TV, Chicopee, Mass.	Greater Media, Inc. New Jersey
East Longmeadow	Greater E. Longmeadow Cablevision, Inc. Ludlow, Mass.	Greater Media, Inc. New Jersey
Erving	Pioneer Valley Cablevision, Inc., Greenfield, Mass.	Times Mirror Cable Television
Everett Mayor	Warner Cable Corp. See Chelsea	Warner Cable Corp.
Fall River Mayor	Greater Fall River Cable TV	Colony Communications Rhode Island
Falmouth	Mass Cablevision, Inc. Falmouth, Mass.	Colony Communications Rhode Island
Fitchburg Mayor	Montachusett Cable TV, Inc. Leominster, Mass.	Aurovideo, Inc., Massachusetts (A division of Adams-Russell Corp.)
Framingham	Community Cablevision, Inc. Framingham, Mass.	
Gardner Mayor	Montachusett Cable TV, Inc. See Fitchburg	Aurovideo, Inc.
Great Barrington	Berkshire Cable TV Co., Inc., Leominster, Mass.	
Greenfield	Pioneer Valley Cablevision, Inc. See Buckland	Times Mirror Cable Television California

Community	Operating Company	Parent Company
Groveland	Stan-Fran Corporation Haverhill, Mass.	Times Mirror Cable Television California
Hampden	Greater E. Longmeadow Cablevision, Inc. Ludlow, Mass.	Greater Media, Inc. New Jersey
Hardwick	Pioneer Valley Cablevision Palmer, Mass.	Times Mirror Cable Television California
Harwich	Cape Cod Cablevision Corp. See Barnstable	
Haverhill Mayor	Stan-Fran Corporation See Groveland	Times Mirror Cable Television California
Holyoke Mayor	Video Enterprises of Western Mass., Holyoke, Mass.	Commonwealth Cablevision Corp., Michigan
Lawrence Mayor	Continental Cablevision of New Hampshire, Inc. Lawrence, Mass.	Continental Cablevision, Inc. Massachusetts
Lee	Berkshire Cable TV Co. Lee, Mass.	
Leicester	Teleprompter of Worcester, Inc. See Auburn	Teleprompter Corp.
Lenox	Berkshire Cable TV Co. See Lee	
Leominster Mayor	Montachusett Cable Television, Inc. See Fitchburg	Aurovideo, Inc.
Lowell City Manager	Lowell Cable Television, Inc. Lowell, Mass.	Colony Communications Rhode Island
Ludlow	Greater New England Cable TV Ludlow, Mass.	Greater Media, Inc. New Jersey
Lynn Mayor	Warner Amex Cable	Warner Amex Cable New York
Malden Mayor	Warner Cable Corp. See Chelsea	Warner Cable Corp.
Marion	Bay Cable TV Associates Wareham, Mass.	Bay Cable TV Associates
Mattapoisett	Bay Cable TV Associates	Bay Cable TV Associates
Medford City Manager	Warner Cable Corp. Medford, Mass.	Warner Cable Corp. New York
Melrose Mayor	Warner Cable Corp. Medford, Mass.	Warner Cable Corp. New York

Community	Operating Company	Parent Company
Methuen	Continental Cablevision of New Hampshire Lawrence, Mass.	Continental Cablevision, Inc. Massachusetts
Monson	Pioneer Valley Cablevision, Inc. Palmer, Mass.	Times Mirror Cable Television California
Montague	Pioneer Valley Cablevision, Inc. Palmer, Mass.	Times Mirror Cable Television California
Nantucket	Nantucket Cablevision Corp. Nantucket, Mass.	
New Bedford Mayor	Whaling City Cable TV, Inc. New Bedford, Mass.	Colony Communications Rhode Island
North Adams Mayor	Berkshire Telecable N. Adams, Mass.	Cox Cable Communications, Inc., Georgia
North Andover	Continental Cablevision of New Hampshire, Inc. Lawrence, Mass.	Continental Cablevision, Inc. Massachusetts
Northfield	Deerfield Cable Systems, Inc. Greenfield, Mass.	
Northampton	Continental Cablevision of Northampton, Northampton	Continental Cablevision, Inc. Massachusetts
Orange	Warner Cable Corp. Athol, Mass.	Warner Cable Corp. New York
Orleans	Cape Cable TV Orleans, Mass.	
Palmer	Pioneer Valley Cablevision, Inc. Palmer, Mass.	Times Mirror Cable Television California
Pelham	Pioneer Valley Cablevision, Inc. Amherst, Mass.	Times Mirror Cable Television California
Pittsfield Mayor	Warner Cable Corp. Pittsfield, Mass.	Warner Cable Corp. New York
Revere Mayor	Colonial Cablevision of Revere, Revere, Mass.	
Richmond	Warner Cable Corp. Pittsfield, Mass.	Warner Cable Corp. New York
Salem Mayor	Warner Cable Corp. Salem, Mass.	Warner Cable Corp. New York
Shelburne	Pioneer Valley Cablevision Greenfield, Mass.	Times Mirror Cable Television California
Somerville Mayor	Warner Cable Corp. Medford, Mass.	Warner Cable Corp. New York

Community	Operating Company	Parent Company
South Hadley Town Manager	Video Enterprises of Western Mass., Holyoke, Mass.	Commonwealth Cablevision Corp., Michigan
Southbridge	Quinebaug Valley Cablevision Southbridge, Mass.	Greater Media, Inc. New Jersey
Spencer	Teleprompter of Worcester, Inc., Worcester, Mass.	Teleprompter Corp. New York
Stockbridge	Berkshire Cable TV Co. Leominster, Mass.	
Stoneham	Greater Boston Cable Corp. Woburn, Mass.	Colony Communications Rhode Island
Sunderland	Deerfield Cable Systems, Inc. Greenfield, Mass.	
Ware	Pioneer Valley Cablevision, Inc. Palmer, Mass.	Times Mirror Cable Television California
Wareham	Bay Cable TV Associates Wareham, Mass.	Bay Cable TV Associates
Warren	Pioneer Valley Cablevision, Inc., Palmer, Mass.	Times Mirror Cable Television California
Webster	Greater W-D Cablevision, Co., Inc., Webster, Mass.	Greater Media, Inc. New Jersey
West Springfield	Spectrum Cable Systems, Inc. Westfield, Mass.	Commonwealth Cablevision Corp., Michigan
Westfield Mayor	Spectrum Cable Systems, Inc. Westfield, Mass.	Commonwealth Cablevision Corp., Michigan
Wilbraham	Greater New England Cable TV Ludlow, Mass.	Greater Media, Inc. New Jersey
Williamstown	Berkshire Telecable N. Adams, Mass.	Cox Cable Communications, Inc., Georgia
Wilmington	Greater Boston Cable Corp. Woburn, Mass.	Colony Communications Rhode Island
Winthrop	Warner Cable Corp. Medford, Mass.	Warner Cable Corp. New York
Woburn Mayor	Greater Boston Cable Corp. Woburn, Mass.	Colony Communications Rhode Island
Worcester City Manager	Teleprompter of Worcester, Inc., Worcester, Mass.	Teleprompter, Corp. New York
Yarmouth	Cape Cod Cablevision Corp. South Yarmouth, Mass.	

Franchise Awarded But System Not Yet in Operation

Table III

Community and Licensing Authority if Other than Selectmen	Operating Company	Parent Company
Acushnet	Fairhaven-Acushnet Cablevision Mattapoisett, Mass.	Cablevision Industries New York
Arlington	Arlington Cablesystems Corporation, Mass.	American Cablesystems Massachusetts
Attleboro	Inland Bay Cable TV Affiliates Orleans, Mass.	Bay Cable Affiliates Massachusetts
Beverly Mayor		Continental Cablevision Boston, Massachusetts
Chelmsford	Lowell Cable TV, Inc.	Colony Communications Rhode Island
Dracut	Rollins Cablevision	Rollins Cablevision, Inc. Georgia
Eastham	Cape Cable TV Orleans, Mass.	Bay Cable TV Associates
Fairhaven	Fairhaven-Acushnet Cablevision Mattapoisett, Mass.	Cablevision Industries New York
Georgetown	Stan-Fran Corporation	Times Mirror Cable Television California
Gloucester Mayor	New England Cablevision	New England Cablevision of Massachusetts, Inc., Mass.
Granby	Commonwealth Cablevision of Massachusetts	Commonwealth Cablevision of Massachusetts, Mass.
Hadley	Hadley Cable Systems	Deerfield Cable Systems Massachusetts
Hudson		Adams-Russell Waltham, Massachusetts
Lexington		Adams-Russell Waltham, Massachusetts
Longmeadow		Times Mirror Corporation California
Lunenburg	Montachusett Cable TV	Adams-Russell Waltham, Massachusetts

Community and Licensing Authority if Other than Selectmen	Operating Company	Parent Company
Marlborough Mayor	Prime Cable of Marlborough Marlborough, Mass.	Prime Cable Texas
Millbury		Greater Media, Inc. New Jersey
Natick	Natick Cablevision Corp. Natick, Mass.	Natick Cablevision Corp. Massachusetts
Newburyport Mayor	Newburyport Cablesystems	American Cablesystems Corp., Massachusetts
Newton Mayor	Continental Cablevision of Newton, Mass.	Continental Cablevision Massachusetts
North Attleboro	UA-Columbia	UA-Columbia Cablevision New Jersey
Oxford		Greater Media, Inc. New Jersey
Peabody		Adams-Russell Waltham, Massachusetts
Plainville	Rollins Cablevision of Southeast Massachusetts, Inc.	Rollins Cablevision, Inc. Georgia
Plymouth	Campbell Communications Plymouth, Mass.	Campbell Communications Massachusetts
Reading	Continental Cablevision of Reading, Reading, Mass.	Continental Cablevision Massachusetts
Rockport	New England Cablevision	New England Cablevision of Massachusetts, Inc., Mass.
Saugus	Continental Cablevision of Saugus, Saugus, Mass.	Continental Cablevision Massachusetts
Somerset	Rollins Cablevision	Rollins Cablevision, Inc. Georgia
Swampscott	Warner Amex Cable	Warner Amex Cable New York
Templeton	Montachusett Cable TV	Adams-Russell Waltham, Massachusetts
Tewksbury	Lowell Cable Television, Inc.	Colony Communications Rhode Island
Weymouth	Bay Shore Cable TV Assoc.	Bay Cable Affiliates
Winchester	Continental Cablevision of Winchester, Winchester, Mass.	Continental Cablevision Massachusetts

Two companies lead the way in Massachusetts. Warnex Amex Cable which is headquartered in New York has been awarded fifteen franchises while Times-Mirror Cable Television which is headquartered in California operating through a subsidiary — Pioneer Valley Cablevision — has been awarded 16 franchises. Not far behind is Colony Communications, Inc., of Providence, Rhode Island which has twelve franchises, each of which is in the name of a separate subsidiary.

The major arguments for the ownership of a cable system by the municipality itself are that it would generate additional revenues for the city, ensure lower subscriber rates and guarantee the opportunity to use cable for the community's needs. On the other hand municipal governments that are already hard pressed to maintain and finance existing services may find it difficult to add a new highly capital intensive service. Moreover, there are some serious questions regarding First Amendment issues that would have to be resolved, particularly with respect to the possible threats to freedom of expression posed by government ownership of this means of communication.

Cooperative ownership has many of the advantages of municipal ownership, but without some of the disadvantages. The key element in cooperative ownership is that the subscribers themselves own and run the system. In this sense it is the most democratic form of ownership since it is the users of the system who determine the priorities of the system, develop its policies, produce its programs and manage its performance. The major stumbling block to cooperative ownership is usually the cooperative's inability to raise the necessary capital. At present there are 76 cooperative systems in the U.S.

A joint venture between a private corporation and a cooperative or non-profit organization presents a promising form of ownership. The profit making arm can generate the capital, utilize the market for business services and run a business like organization while the non-profit arm can share in the revenues, provide varied programming and manage the public access process. Grosse Point, Michigan has such a successful joint venture operation. The cable system is run by a private cable company and a local non-profit organization on an equal partnership basis. The cable operation put up 25% of the initial capital outlay while city revenue bonds accounted for the other 75%. Profits are shared on an equal basis. In Boston between 20% and 30% of the system will be made available for local ownership.

However, local ownership should be sharply differentiated from an all-too-common practice called "rent-a-citizen" where local investors are invited to join an applicant's proposal on the basis of the ability of such persons to assist the applicant in obtaining the franchise. Invariably the local investors are then bought out by the parent cable company at a substantial profit after the franchise is obtained.

Finally, even if a local government decides municipal ownership is presently impractical, its future application should not be precluded. *Therefore, ordinances should include recapture or buy-back agreements in which the city or town would have the option to purchase the cable system at a price based on net profitability and the value of the investments minus depreciation.*

Cable Network Programming

The most prominent of the "national" cable program services are **Entertainment and Sports Programming Network (ESPN)** and **Cable News Network (CNN).**

ESPN is the nation's first all-sports network. It is a 24 hour channel of national and international sporting events not carried by the networks. Examples of ESPN programs are: NCAA championship events, Grand Prix World Championship Tennis, talk shows featuring sports stars etc.

CNN began transmitting in June 1980, and is currently seen in 2.2 million households. It is the world's first 24-hour a day network devoted entirely to news. In short, CNN provides its viewers with television news on demand.

Both ESPN and CNN are supported by national advertising and by a monthly fee from the cable system operators who carry their services. These fees are determined on a subscriber basis. Usually, the arrangement also allows the local cable system operator to use a couple of advertising spots at the beginning or end of a program. Some of the major program services that are primarily supported by advertising are:

- **USA Network:** It presents two special programming services — Madison Square Garden Sports and Calliope. MSG Sports covers major sporting events not covered nationally. Calliope, a children's programming service from the Learning Corporation of America, is comprised of short films by well known film makers.

- **The Satellite Programming Network (SPN):** It offers round-the-clock viewing including interviews with sports personalities, consumer awareness programming and exercise shows.

- **Spanish International Network (SIN):** It offers a variety of Hispanic entertainment and sports programming from Mexico, Latin America and South America.

Pay-Cable Programming

The proliferation of satellite technology and the relaxation of FCC regulations regarding the cable casting of feature films have led to a dramatic growth in pay-cable services. In 1979 alone the number of services doubled to the point where 19 programming services were being provided by 15 different suppliers. Of these, two accounted for over 80% of subscribers.

- **Home Box Office,** a subsidiary of Time Inc., dominates the industry with 66% of all pay-cable subscribers.
- **Showtime,** which is jointly owned by Teleprompter (the largest of the cable TV companies) and Viacom International (a large cable operator and TV program syndicator) has 16% of the subscriber market.
- **Warner Amex** has developed and now sells cable system operations 13 hours a day of children's programming called **Nickelodeon** which mixes education with entertainment in the manner of the Sesame Street series on public television.

Examples of optional pay TV services are:

- **Home Theatre Network:**
  It provides special family entertainment featuring movies and specials, uncut and commercial-free.
- **Galavision:**
  It presents entertainment from Mexico, Venezuela and other Latin American countries.
- **The Movie Channel:**
  It programs only recently released movies. It is a national satellite network featuring 16 current run films each month, shown 24 hours a day.

Both CBS and ABC are planning cable networks devoted to the performing arts. CBS's announcement of the first season's first offerings sounded like a program schedule for PBS: nine concerts by the Vienna Philharmonic, a modern jazz series, and a monthly two-hour arts 'magazine'. Moreover, the BBC has recently sold the rights to its dramatic and cultural programming to RCTV, a new cable network created by Rockefeller Center.

Thus, pay-cable has facilitated the development of 'narrowcasting' where programs are produced and aired that are of interest only to a small audience which is willing to pay a subscription fee to get them. On the other hand, 'broadcasting' applies to programs that are able to attract a random 30% of the viewing public so that they are assembled for unrelated advertising.

Until recently, the FCC's pay-cable rules had prohibited the sale of advertising on pay-cable channels. However, that rule has also been overturned, and a trend is likely to develop where advertising is placed at the beginning and end of pay programs.

Automated Services

Examples of automated services are:

- News ticker channels that are character generated and that program national and international events 24 hours a day. Generally one of the News Agencies such as UPI or AP provides this service.
- Stock reports which carry stock market quotations delayed by the 15 minutes required by federal regulations.
- Time and weather reports.
- Programming guides to what's showing on all the other channels.
- Shopping guides which feature round-the-clock price comparisons of a wide variety of goods and services.

Thus the range and variety of services cable television can offer subscribers has given rise to subscriber tiers. Viewers may be given the option of choosing between different levels or tiers of service. For example, the basic cable viewer may be offered a two-tier service. The second and more expensive tier would offer a larger number of basic channels and a broader range of services such as additional superstation programming and more cable network programming.

Pay cable remains an optional service, the subscribers' range of options being limited only by the range of services offered and by the subscribers' willingness and ability to pay for each additional service.

What Kind of Local Programming Can Cable Television Provide?

The term local programming is an umbrella term to describe:

- local origination programming
- public access programming
- institutional programming
- leased programming

Until recently, the FCC had a series of regulations regarding local programming, particularly as it related to public access. These rules had required all systems serving over 3,500 subscribers to have up to 20 channel capacity and up to 3 channels designated for access purposes. One designated access channel was for use by the public on a first come first served basis. The second was for use by the local municipality itself and the third was to be reserved for use by the local public school system. System operators were also required to make available video production equipment and personnel to local access users at reasonable rates.

The Supreme Court found that the FCC lacked the statutory jurisdiction to make such rules for cable systems. However, the Court's decision did not address the powers of local and state governments to make such requirements. *Communities with franchises must look to the language of their ordinances to determine how the Court's ruling affects access.* If the franchising agreement calls for channel capacity and access "in accordance with FCC requirements" the community may no longer have any legal basis for requiring access services.

However, local governments granting franchises for the first time would appear to be free to negotiate reasonable access packages. But to be on the safe side, local governments should not demand access channels and facilities in excess of a reasonable foreseeable need.

Accordingly, with federally mandated access channels already a thing of the past, it is clear that the battle for cable as a local medium will have to be fought by communities and subscribers themselves. *A community must demand community services when the local franchise is being written since deregulation means, in essence, that if the citizens of a community don't demand a voice in cable they won't get it.*

Local Origination Programming

This term is used to describe programs produced by the cable system itself. Local origination programming can be as comprehensive as the cable operator is willing for it to be. The level of programming depends on the number of studios built and operated by the cable operator; the capability of the studio facilities, and the training and number of personnel. In short, local origination programming is a function of the degree of commitment to it on the part of the cable operator, and the specific requirements insisted upon by your community in the course of the franchise process. To reiterate: what your community does not ask for, and does not incorporate into the franchise ordinances, it will not receive.

Public Access Programming

Public access programming refers to programs of a non-commercial nature produced by, or in contract with members of the community, community organizations, the local municipality, etc. The opportunities for public access were one of the reasons why cable television was so highly touted in the early 1970's. Many cable operators made extravagant promises of access in their franchise proposals which they later reneged on once the franchise was signed.

Even when public access was provided, programs were often simplistic, amateurish and parochial so that public interest — and participation, quickly waned.

The U.S. Supreme Court's ruling that the FCC could not require cable companies to set aside channels specifically for public access further complicated the situation.

As a result, today fewer than 400 communities have access channels, and many still get far less support than they originally bargained for.

However, in communities where public access has been pushed vigorously and imaginatively and where access has been promoted by the cable operator the results have lived up to the exciting potential of the medium.

In San Diego, California, one community organization — the Community Video Center — coordinates all access programming on the city's 150,000 home cable systems. The center helps produce programming for San Diego's huge Mexican American population, and puts on a series that involves the city's senior citizens in television production. It also runs a weekly series for which the center provides a free studio and camera crew to any citizen — the 'best example' of access programming, the series includes concerts, poetry readings, personal views of civic affairs and telecasts of local events.

In Reading, Pennsylvania, a city of 80,000, the Berks Cable Company has 14 studios which can originate cable programming at 64 sites, and it uses a two-way channel to create access programming. The two-way channel is run between city hall, several schools, two housing projects for the elderly, and the social security office. The residents of the housing center have learned how to organize group discussions, sing-alongs and quiz shows, and have developed a system to spot 'commercials' that notify subscribers about food stamps and other services. Split screen pictures show participants at the different locations. The two-way channel has set up conversations with local officials from ten different areas (in one case students from different schools simultaneously questioned the Pennsylvania Secretary of Education); it links senior citizens and children in discussion about the generation gap, it allows the 35,000 subscribers to question the Mayor on a weekly basis, and it enables doctors and lawyers to answer questions from subscribers about neighborhood health and legal controversies.

Through contributions from local business, citizens and government, the channel is self-supporting. Channel costs come to about $2,000 per week, which is, in the context of television programming costs, extraordinarily cheap.

The extent to which access programming opportunities are provided for and taken advantage of depends on:

- the forms of regulation that insure the public's access to the access channels
- the allocation and reservation of a certain amount of channel capacity
- the methods by which the access channels are financed

Forms of Regulation

Depending on the size of the community and its range of diversity, each city or town should have one or a number of Access Boards incorporated that are non-profit, and with a Board of Directors drawn from all elements of the community. These Boards should have complete control over the access process, and access programming.

Among other things they would allocate channel space and the use of studios from which programs could be broadcast; they would facilitate the use of the cable system by institutions that could benefit from it, and they would ensure that training is available for those who want to use the system.

Channel Allocation

There are two major considerations:

- First, the size, ethnic diversity, geographic and demographic composition of the community;
- Second, the opportunity for a two-way interactive channel along the lines of the Reading, Pennsylvania project.

Public access is a local medium, and it best fulfills its potential when it stimulates maximum public participation. In many communities, particularly the smaller ones, a single community wide channel will probably be sufficient to meet the initial demand. However, as a community becomes familiar with the technology, presence and possibilities of access, demand is likely to grow. Thus, even in smaller systems a number of channels should be allocated to access with the provision that a new channel will be brought into use only when the first alive channel has reached 80% (for example) of prime time programming capacity. New systems should also provide an additional channel which can be activated for interaction use. An interactive link will encourage greater public participation in local decision-making, and facilitate new forms of community interaction.

In larger communities, a good rule of thumb is that each 'neighborhood' should have its own access channel, and that a second neighborhood channel should be allocated for use for interactive purposes. And again there should also be one community-wide access channel with its own companion channel reserved for return interactive use.

Financing Public Access

On the face of it, if the franchise ordinance requires access channel capacity and facilities, then the cable operator should provide the hardware (studios, equipment, etc.). The expense of including access centers and equipment in the systems design is, in most cases, marginal when compared to the magnitude of the capital requirements for the construction of such a system.

The real requirement for financing public access comes on the operational side. One way to reduce operational costs is to house the access studio(s) in public centers such as the universities, community schools, library branches, theaters, etc. FCC rules presently allow up to 5% of the total system revenue to be paid as a local franchise fee. This 5% should be used as the main source of revenue for the public access system.

Institutional Programming

Institutional programming refers to the use of the cable system by local institutions. An "institutional loop" connects the member units of an institution with each other, and with subscribers to the cable system. For example, it could connect all the public schools with each other and with subscribers, or all hospitals with each other and with subscribers, or all libraries, etc. Thus, individual unit members of the institution can communicate with each other or with the home viewer.

Examples of the kinds of uses to which an institutional network might be put are:

- An educational channel for use by the public school system. For example, a teacher specialized in a particular area might lecture from a local origination point along the cable system, and the lecture would be received by many different classes in schools throughout the school system.
- Similarly an educational channel for use by colleges, universities, vocational schools or parochial schools would enable these institutions to interconnect with each other, with students within their own institutions, or with subscribers at home through closed-circuit programming.
- A cultural channel could be used by museums, theater groups and other cultural organizations.
- A medical channel could be used by health care institutions for public education, record-transfer and in-service training.
- A government channel could be used to facilitate transactions between local government departments.

Generally speaking, the cable franchise should be required to provide a cable drop and an outlet at no cost to institutions within the following categories:

- public, private and parochial schools
- universities and colleges
- vocational and continuing education schools
- public libraries
- arts and cultural institutions
- health centers and hospitals
- churches and/or religious organizations
- agencies and departments of local government

However, the value of cable television to institutions and the manner in which it can expand, explore and communicate information depend very much on the institutions' own understanding of their needs, their desire to communicate with the other institutions with which they are connected, and their own voluntary commitment of resources to take advantage of this opportunity.

Since the cable industry has experience in the area of institutional use it is incumbent upon a community to demand that franchise applicants specify what they would undertake to do to help these institutions fully utilize the system.

Leased Access

Not all locally produced programming is appropriate to the public access channel. Where commercial material is produced at the local or regional level, the existence of a channel on which time can be purchased at fair and reasonable rates allows local entrepreneurs to generate additional revenues and support greater production costs. Leased channels also provide directed advertising opportunities for local merchants at affordable rates. Moreover, as cable television penetration grows nationally, various commercial, educational and special interest programming will be developed primarily for cable distribution. Accordingly, the franchise agreements should require the cable operator to offer channels on a basis that do not discriminate among potential users or in favor of his own program offerings.

The Issue of Privacy

The marriage of computer and cable technology has made possible a whole range of interactive television programming services, and the technical expertise and feasibility to provide additional new programming services. In an earlier section we mentioned the QUBE security system which can use cable to protect your home from fire and burglary and the QUBE medical alert system which can bring you help when you need it. The fact that interactive television allows you to express your preferences with regard to products, issues, personalities, public figures, etc., also means that computers can store information about you, your viewing habits and your personal preferences. As two-way capability becomes more developed, the cable operator will have the capability to monitor subscribers for billing, market data collection, and other purposes. In short, subscribers' viewing habits and preferences could become available at the touch of a button. As non-entertainment consumer services grow, so does the possibility that cable systems will be used for the transfer, collection and storage of a broad range of personal data including medical, financial and commercial buying information. For example, lately, there has been increasing talk about the potential of cable to arrest some of the crime that is endemic to urban centers. Cable TV can greatly cut the cost of expensive closed circuit TV and expand the whole concept of TV surveillance.

The potential for abuse in all these areas is enormous, and that potential will increase as yet more sophisticated systems embodying microcomputers and cable technology are developed.

The following are the minimal steps your local government should take to protect your privacy:

- It should undertake an educational campaign to make the community's residents aware of the issues involved.
- It should require that the cable operators provide subscribers with printed informational material that contains a clear and comprehensive explanation of the subscribers' privacy rights, what protection they have under the law, and what prior additional privacy practices, if any, have been instituted by the cable operator.
- It should prohibit the cable operator from releasing to third parties any information pertaining to the viewing habits or preferences of individual subscribers without their written consent.
- It should require that the cable operator inform subscribers in advance of any survey of their behavior that produces identifiable information about them as individuals. Subscribers should have the unconditional right not to participate in such surveys.
- It should require that all data collected by the cable operator, other than that needed by the operator for billing purposes and service records, be stored in the aggregate only until the subscriber otherwise consents.

Finally, Massachusetts does not have privacy legislation comparable in scope to the Federal Privacy Act of 1974. It is in the interest of all communities in Massachusetts to collaborate with each other to sponsor similar type legislation at the state level.

Final Considerations

Cable television is a boom industry. The financial investments being made in the industry by big business are just one indicator of how corporate America perceives the future. For example:

- American Express purchased 50% of *Warner Cable Co.*, the nation's third largest cable company for $175 million, asumed $30 million of its debts and agreed to underwrite half its future financial needs.
- General Electric paid $470 million for *Cox Broadcasting Co.*, the owner of the fifth largest company in the industry.
- Times Mirror Co., paid $129 million for *Communications Properties, Inc.*, to become number six in the field.
- Time Inc., paid $140 million for the public shares of *American Television and Communications* to become the second largest cable operator.
- In 1979 cable reached 19% of total TV households while gross revenues exceeded $1.5 billion. By late 1981 cable is expected to reach 30% of the nation's homes.

A cable company building new franchises consumes capital voraciously. Estimates to "wire" Boston range anywhere from $60 million to $100 million. But the pay-offs may be enormous.

A cable operator makes back his investment from the flow of depreciation. From that point on there are few capital costs, low operating costs, a steady cash flow and the opportunity to add new services that bring in even more money. Moreover, present state law limits the franchise fee payable by a cable operator to a municipality to *fifty cents* per subscriber annually.

Thus, the competition for cable franchises is cut-throat. This puts your community in an excellent position to drive a hard bargain and make a cable operator pay for the privilege of bringing cable to your community.

It is therefore up to your community to know:

- What the capabilities are.
- What the needs of the community are.
- What procedures must be instituted to make the franchising process as open, fair and representative as possible.
- What it can legitimately demand from potential operators.
- What safeguards need to be built into the franchise ordinance in the event of default by the cable operator.

Cable technology is not just a collection of hardware and software for improving reception or providing more entertainment channels. A recent report on its potential noted that cable was ". . . at its best an invaluable community resource with services for young and old, for rich and poor, for the highly educated and the less educated, for peoples of different languages and customs, for the handicapped and the shut-in, providing new forms of entertainment, education, advertising, and current information."

That is the promise. The reality, however, will depend on the decisions made in your community at every step of the franchising process. Ultimately, it is up to you to ensure that these decisions reflect the common interests of the many and not the vested interests of the few.